



# Computer Science



Archdiocese of Liverpool

## Curriculum intent:

The Computer Science Department intends to equip all pupils to use computational thinking and creativity when understanding the modern world. We understand that Computer Science has deep links to Mathematics, Science and Design and Technology. We aim to build on this and teach the principles of Information and Computation.

We equip pupils to use Information Technology to create programs, systems and a range of content. Computing ensures that pupils become digitally literate at a level suitable for the future workplace and as active participants in a digital world.

## Year 10

TERM 1

### Content

#### Systems Architecture

This unit explains the functionality of all components involved in the architecture of a computer system.

#### Networks

This is a theoretical unit that gives pupils an overview of the mechanics of different networks.

### Concepts and Skills

- The role of the CPU.
- Function & Characteristics of component parts.
- The use of Memory & storage.
- Local Area Networks & Wide area Networks.
- Wireless Networking.
- Types of network, protocols & layers.

TERM 2

#### Algorithms

This unit explains the methodologies of computational thinking & formulating algorithms.

#### Programming

This unit explores the constructs of programming & computational logic.

- Searching algorithms.
- Sorting algorithms.
- Flowcharts & Pseudocode.
- Interpretation & correction.

- Programming concepts.
- Sequencing, selection & iteration.
- Arrays, procedures & functions.

TERM 3

#### Non examined assessment.

This unit of work challenges each student to work independently for a period of 20 hours developing a program for an examination board set assignment.

- Scenario based analysis.
- Computational planning – pseudocode, flow chart design, algorithm structures.
- Program development.
- Testing in development – debugging.
- Final program testing for logical & syntax errors.
- Evaluation.

